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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,548	08/05/2003	Susan R. Norris	MONS:059US	1244
46795	7590	04/11/2006		
FULBRIGHT & JAWORSKI, LLP 600 CONGRESS AVENUE, SUITE 2400 AUSTIN, TX 78745			EXAMINER BUI, PHUONG T	
			ART UNIT	PAPER NUMBER

1638

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,548

Applicant(s)

NORRIS ET AL.

Examiner

Phuong T. Bui

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 30-38 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,8,9,13-16,18-23,30-36 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10-12,24 and 37 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/18/05, 4/19/04, 4/12/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Office acknowledges the receipt of Applicant's restriction election filed March 8, 2006. Applicant elects Group I and Invention A (SEQ ID NO:1 encoding SEQ ID NO:2) with traverse. Applicant stated primarily that 1) Group III claims are genetically linked to Group I claims because they incorporate the limitations of the Group I claims; 2) generic or linking claims must be examined with the linked inventions; 3) a search and examination of all linked claims would not cause a serious burden because the relevant claims incorporate the limitations of the Group I claims. Applicant's traversals are partly persuasive: claims drawn to nucleic acid molecules encoding phytol kinase and plant phytol kinase generically will be examined with SEQ ID NO:1 encoding SEQ ID NO:2 (*Arabidopsis thaliana*). Additionally, the claims of Group III drawn to a plant and seed containing these nucleic acid molecules will also be examined. However, the claims of Group III drawn to a plant having a particular phenotype or method of making a plant having a particular phenotype requiring a particular level of tocopherol or tocotrienol will not be rejoined, as these Group III claims are patentably distinct from the Group I claims: the plant expressing a particular phenotype is unrelated and has different functions compared to a plant containing a nucleic acid molecule. Thus, rejoining all of Group III claims would be a serious burden on Office resources because they have additional issues requiring consideration (such as enablement) not present in Group I claims.

Claims 1-24 and 30-38 are pending. Claims 1(a, b, d, e), 4(a-o), 5-7, 10-12, 17 (SEQ ID Nos. 18 and 19), 24 and 37, drawn to SEQ ID NO:1 encoding SEQ ID NO:2

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and chlorophyllase are examined in the instant application. Claims 1(c, f-q), 2, 3, 4(p-aa), 8, 9, 13-16, 18-23, 30-36 and 38 are nonelected. Claims 2 and 3 are non-elected because SEQ ID NO:1 is from *Arabidopsis thaliana*. It should be noted that the second nucleic acid molecule as elected is chlorophyllase and not "chlorophyllase dxs" as indicated in the restriction requirement. This is an inadvertent error, as "dxs" is a separate species. Any inconvenience to Applicant is regretted. This restriction is made FINAL.

Claims reciting nonelected inventions should be amended accordingly.

Applicant shall have priority benefit of Provisional Application No. 60/400689 filed August 5, 2002.

Information Disclosure Statement

2. Initialed and dated copies of Applicant's IDS form 1449, filed April 12, 2004, March 18, 2005 and April 19, 2004 are attached to the instant Office action.

Claim Rejections - 35 USC § 112, 2nd paragraph

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 4, 5-7, 10-12, 24 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims which recite "phytol kinase polypeptide", it is unclear whether the polypeptide is a complete phytol kinase protein or is any two or more peptides obtained from a phytol kinase protein.

Clarification and/or correction are required.

Claim Rejections - 35 USC § 112, first paragraph

5. Claims 1, 4, 5-7, 10-12, 24 and 37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the **written description** requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims reciting phytol kinase and plant phytol kinase generically and claims reciting less than 100% sequence identity lack adequate written description because Applicant does not disclose a representative number of species as encompassed by these claims. The claims encompass mutants and allelic variants of phytol kinases and thus imply that structural mutants and variants exist in nature, yet no structural mutant or variant has been disclosed. The claims also encompass phytol kinases from other species. The implication is that there is a gene and a protein other than that disclosed which exists in nature, but the structure thereof is not known. Applicant discloses SEQ ID NO:1 encoding SEQ ID NO:2 isolated from *Arabidopsis thaliana*. The enzyme from a single *Arabidopsis thaliana* clone is not representative of said enzyme obtained from other *Arabidopsis thaliana* clones, other plants or organisms. There are insufficient relevant identifying characteristics to allow one skilled in the art to predictably determine the structure of phytol kinases from other sources based upon the disclosure of SEQ ID NO:1, absent further guidance. Accordingly, there is lack of adequate description to inform a skilled artisan that Applicant was in possession of the claimed invention at the

time of filing. See Written Description guidelines published in Federal Register/ Vol.66, No. 4/ Friday, January 5, 2001/ Notices; p. 1099-1111.

6. Claims 4, 10-12, 24 and 37 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for SEQ ID NO:1 and a nucleic acid sequence encoding SEQ ID NO:2, does not reasonably provide enablement for nucleic acid sequences having less than 100% sequence identity to these sequences, particularly those whereby the phyto kinase activity is not retained. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The breadth of the claims encompasses sequences having unspecified deletions, additions, substitutions and combinations thereof without maintaining phyto kinase activity. It is unclear how one skilled in the art would use a sequence which does not have enzymatic activity. Even if the activity is retained, neither the state of the prior art nor Applicant provided guidance as to which regions of SEQ ID NOs:1 or a sequence encoding SEQ ID NO:2 must be retained for activity, and which regions can tolerate mutations. Applicant provided no working examples of sequences having less than 100% sequence identity. While one skilled in the art can readily make mutations to SEQ ID NO:1 or a sequence encoding SEQ ID NO:2, further guidance is required as to which mutations would retain enzymatic activity. Absent of such guidance, one skilled in the art cannot make and use the claimed invention as commensurate in scope with the claims without undue experimentation.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4-7, 10-12 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Alexandrov et al. (EP 1033405A2, published September 6, 2000 (Applicant's IDS) and N_Geneseq_21 Database, Accession No. AAC36634, SEQ ID NO:14519, see Result 2 (U)). Alexandrov teaches a sequence obtained from *Arabidopsis thaliana* having 96.2% sequence identity to Applicant's SEQ ID NO:1 (see sequence search result 2), DNA construct (claim 11), canola plant (Brassica, p. 329, ln. 50), and seed (p. 329, lns. 56-57) containing said sequence. Even though the prior art does not specifically refer to its sequence as a phyto kinase, it appears to be a phyto kinase because claim 4 of the instant application claims a sequence having 80% sequence identity with SEQ ID NO:1. Accordingly, Alexandrov anticipated the claimed invention.

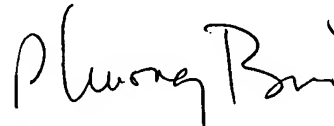
Remarks

9. Claim 17 is objected to as being dependent on a rejected claim but would be allowable if rewritten in independent form.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong T. Bui whose telephone number is 571-272-0793.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phuong T. Bui
Primary Examiner
Art Unit 1638

03/18/06